

REQUEST FOR ACCESS TO ABANDONED APPLICATION UNDER 37 CFR 1.14(a)

In re Application of

Lobb et al.

Application Number

08/373,857

Filed

1/18/95

Group Art Unit

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I hereby request access under 37 CFR 1.14(a)(3)(iv) to the application file record of the above-identified ABANDONED application, which is: (CHECK ONE)

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US005932214A

United States Patent [19]

Lobb et al.

[11] Patent Number: **5,932,214**[45] Date of Patent: **Aug. 3, 1999**[54] **TREATMENT FOR INFLAMMATORY BOWEL DISEASE WITH VLA-4 BLOCKERS**

[75] Inventors: Roy R. Lobb, Westwood; Linda C. Burkly, West Newton, both of Mass.

[73] Assignee: Biogen, Inc., Cambridge, Mass.

[21] Appl. No.: 08/950,660

[22] Filed: Oct. 15, 1997

Related U.S. Application Data

[62]ntinuation of application No. 08/456,124, May 31, 1995., abandoned, which is a continuation-in-part of application No. 08/373,857, Jan. 18, 1995., abandoned, which is a continuation-in-part of application No. 08/284,603, Aug. 11, 1994., abandoned, which is a continuation-in-part of application No. 07/835,139, filed as application No. PCT/US93/00924, Feb. 2, 1993., abandoned

[51] Int. Cl.⁶ A61K 39/395; A61K 38/17

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424/133.1; 424/134.1; 424/136.1; 424/141.1;
424/143.4; 424/153.1; 424/154.1; 514/2;
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530/388.73; 530/388.75

[58] Field of Search 424/130.1, 133.1,
424/141.1, 153.1; 514/2, 8; 530/350, 388.1,
388.7

[56] **References Cited****U.S. PATENT DOCUMENTS**

4,816,397 3/1989 Boss et al. 435/68
4,833,092 5/1989 Geysen 436/501
5,116,964 5/1992 Capon et al. .
5,272,263 12/1993 Hession et al. .
5,730,978 3/1998 Wayner .

FOREIGN PATENT DOCUMENTS

0 314 863 5/1989 European Pat. Off. .
0 330 506 9/1989 European Pat. Off. .
0 333 517 9/1989 European Pat. Off. .
0 346 078 12/1989 European Pat. Off. .
WO 90/03400 4/1990 WIPO .
WO 90/13300 11/1990 WIPO .
9103252 3/1991 WIPO .
WO 92/00751 1/1992 WIPO .
WO 93/13798 1/1992 WIPO .
WO 95/19790 7/1995 WIPO .

OTHER PUBLICATIONS

Jakubowski, et al. "Vascular Cell Adhesion Molecule (VCAM)-Ig Fusion Protein Defines Distinct Affinity States of the Very Late Antigen-4 (VLA-4) Receptor" *Cell Adhesion and Communication* 3:131-142 (1995).

Brown, Jr., P. et al., "Anti-Tac-H, a Humanized Antibody to the Interleukin 2 Receptor, Prolongs Primate Cardiac Allograft Survival" *Proc. Natl. Acad. Sci. USA* 88:2663-2667 (1990).

Burkly, L. et al., "Signaling by Vascular Cell Adhesion Molecule-1 (VCAM-1) Through VLA-4 Promotes CD3-dependent T Cell Proliferation" *Eur. J. Immunol.* 21:2871-2875 (1991).

Clackson, T. et al., "Making Antibody Fragments Using Phage Display Libraries" *Nature* 352:624-628 (1991).

Co, M.S. et al., "Humanized Antibodies for Antiviral Therapy" *Proc. Natl. Acad. Sci. USA* 88:2869-2873 (1990).

Damle, N. et al., "Vascular Cell Adhesion Molecule 1 Induces T-cell Antigen Receptor-dependent Activation of CD4⁺ T Lymphocytes" *Proc. Natl. Acad. Sci. USA* 88:6403-6407 (1991).

Devlin, J. et al., "Random Peptide Libraries: A Source of Specific Protein Binding Molecules" *Science* 249:400-406 (1990).

Dobrina, A. et al., "Mechanisms of Eosinophil Adherence to Cultured Vascular Endothelial Cells" *J. Clin. Invest.* 88:20-26 (1991).

Elices, M.J. et al., "VCAM-1 on Activated Endothelium Interacts with the Leukocyte Integrin VLA-4 at a Site Distinct from the VLA-4/Fibronectin Binding Site" *Cell* 60:577-584 (1990).

Freedman, A. et al., "Adhesion of Human B Cells to Germinal Centers in Vitro Involves VLA-4 and INCAM-110" *Science* 249:1030-1033 (1990).

Harris, W.J. and S. Emery, "Therapeutic antibodies—the coming of age" *TIBTECH* 11: 42-44 (1993).

Hemler, M. E. et al., "Characterization of the Cell Surface Heterodimer VLA-4 and Related Peptides" *J. Biol. Chem.* 262(24):11478-11485 (1987).

Holzmann, B. and I.L. Weissman, "Integrin Molecules Involved in Lymphocyte Homing to Peyer's Patches" *Immunological Reviews* 0(108):45-61 (1989).

Podolsky, D.K. et al., "Colonic Mucin Composition in Primates Selective Alterations Associated with Spontaneous Colitis in the Cotton-top Tamarin" *Gastroent.* 88:20-25 (1985).

Podolsky, D.K. et al., "Spontaneous Colitis In Cotton-Top Tamarins: Histologic, Clinical and Biochemical Features of an Animal Model of Chronic Colitis" *Digestive Diseases and Sciences* 30(4):396 (A-32) (1985).

Pulido, R. et al., "Functional Evidence for Three Distinct and Independently Inhibitable Adhesion Activities Mediated by the Human Integrin VLA-4" *J. Biol. Chem.* 266(16):10241-10245 (1991).

Rice, G.E. et al., "Vascular and Nonvascular Expression of INCAM-110", *Am. J. Pathology* 138(2):385-393 (1991).

Riechmann, L. et al., "Reshaping Human Antibodies for Therapy" *Nature* 332:323-327 (1988).

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[57]

ABSTRACT

A method for the treatment of inflammatory bowel disease (IBD) is disclosed. The method comprises administration of an antibody, polypeptide or other molecule recognizing VLA-4, a surface molecule expressed on most types of white blood cells and involved in leukocyte adhesion to endothelium and other tissues in the gut.

15 Claims, 8 Drawing Sheets